Appendix A
Previous Studies of Federal Subsidies to Electricity and Public Power

Introduction

A variety of methods have been used to estimate the magnitude of subsidies involved in Federal provision of electricity and other financial advantages that accrue to public sources of electric power. With the decline of some types of subsidies and the onset of an increasingly competitive wholesale electricity market, an increasing number of analysts have opted for a measure of subsidy based on the actual value of the commodity.

Table A1 at the end of this appendix provides some detail about the methods used in nine other reports on subsidies present in the Federal supply of electricity. The first two, both analyses of the 1980s, arrived at relatively large estimates, using program outlays in the Federal budget, tax expenditures, and loans. The Tax Reform Act of 1986 gradually phased out accelerated cost recovery, by which capital-intensive industries received very large subsidies. While continuing the budget analysis of the 1980s, the 1992 report by the Energy Information Administration (EIA)[154] introduced the idea of measuring subsidies through market comparison, in this case a comparison of Power Marketing Administration (PMA) wholesale rates with the wholesale rates of adjacent investor-owned utilities.[155]

Over a period of several years, the U.S. General Accounting Office (GAO) published a series of reports on the operations of the PMAs. The reports specified several areas (benefits, delayed and abandoned construction projects, and legislative interventions preventing rate recovery) in which PMAs generally did not recover direct power costs through rates, and which therefore constituted a subsidy. The U.S. Department of Energy, responding for the PMAs, concurred with GAO's findings but suggested that some of the costs might ultimately be recoverable. The GAO also found and quantified several instances in which PMAs received subsidies through access to lower interest rates, and examined the impacts of price differentials using a slightly different market measure. GAO calculated the preference customers' average rate for PMA power and compared that to their average rate for power from all sources. It was concluded that, without Federal hydropower, rate impacts to preference customers would be varied and widespread; however, the report did not refer to this price differential as a subsidy.

The Congressional Budget Office (CBO) continued the use of average cost prices in its 1997 report, *Should the Federal Government Sell Electricity*? Attempting to determine the value of Federal assets, the authors determined the difference in average wholesale price between PMAs and investor-owned utilities. With this, the CBO was able to estimate the net cash flow from Federal assets. CBO found that a potential sale of these assets, in present value terms, would be heavily influenced by assumptions about future market rates, concluding that under pessimistic conditions, sale of all Federal assets would result in a budgetary loss of $200 million.

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[154]Energy Information Administration, *Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets*, SR/EMEU/92-02 (Washington, DC, November 1992).

[155]The source for the comparison was Form EIA-861, "Annual Electric Utility Report."

As a competitive electricity market has been introduced in the past several years, a number of analysts have examined the question of price differential between public and private suppliers of electricity. While only tangentially related to the issue of subsidies, this literature lays out the many differences in cost character and purpose between investor-owned utilities and the several types of publicly owned utilities.

Annotated Bibliography

This bibliography briefly describes the estimates made in other reports for the range, magnitude, and effect of Federal intervention in electricity markets. The entries are arranged in chronological order and are characterized as "interest rate measure," "market measure," "budget analysis," or some combination thereof.

H.R. Heede, R.E. Morgan, and S. Ridley, *The Hidden Costs of Energy* (Washington, DC: Center for Renewable Resources, 1985). [*Interest rate and budget analysis*] Estimating Federal electricity subsidies at $28 billion (1984 dollars), the authors included tax provisions such as accelerated cost recovery, tax exemptions for municipal bonds, agency outlays for the Bureau of Reclamation, the Rural Electrification Administration (now the Rural Utilities Service), the Power Marketing Administrations, and the Tennessee Valley Authority (TVA).

M. Kosmo, *Money to Burn? The High Costs of Energy Subsidies* (New York, NY: World Resources Institute, 1987). [*Market measure*] Pointing out that the marginal cost of providing electricity was well above the price frequently realized, Kosmo suggested that U.S. consumers of electricity, especially consumers during peak periods, were receiving a subsidy of about $91 billion (1999 dollars) annually. The industry has changed greatly since 1987: peak load pricing is common in retail markets, wholesale markets generally reflect time-of-day value, and most importantly, marginal costs have fallen below the average costs realized in most retail transactions, thereby eliminating this type of subsidy.

C. Komanoff and C. Roelofs, *Fiscal Fission: The Economic Failure of Nuclear Power. A Greenpeace Report on the Historical Costs of Nuclear Power in the United States of America* (New York, NY: Komanoff Energy Associates, 1992). [*Other measure*] Using a cumulative approach to measuring subsidies to the nuclear industry in the United States, Komanoff quantified the total Federal subsidy to the industry at $97 billion (1990 dollars) over the period 1950-1990. Komanoff included Federal research and development, regulation, uranium enrichment, waste fund shortfall, and underpayment of taxes but did not include the Price-Anderson Act, which places substantial limitations on liabilities of nuclear operators.

D.N. Koplow, *Federal Energy Subsidies: Energy, Environmental, and Fiscal Impacts* (Lexington, MA: The Alliance to Save Energy, 1993). [*Interest rate and budget analysis*] Koplow estimated that program outlays for the PMAs and TVA amounted to $746 million (1989 dollars). Additionally, Koplow identified $1.2 billion in program outlays for the Rural Electrification Administration. Koplow estimated program outlays for the Army Corps of Engineers at $643 million, but he did not quantify a program outlay for the Bureau of Reclamation. Tax expenditures played an important role in Koplow's analysis. He estimated an interest rate subsidy of nearly $1.4 billion for exclusion of interest on municipal bonds, and another $283 million for the tax exclusion on bonds for certain energy facilities. By summing accelerated cost recovery tax deductions[156] and agency programs for primary energy sources and then allocating their effects to electricity by share of fuel, Koplow arrived at a total estimate for electricity subsidy of $22 billion (1989 dollars). Koplow did not include an estimate based on market price differential.

[156]Phased out by the Tax Reform Act of 1986.

U.S. House of Representatives, Subcommittee on Oversight and Investigations of the Committee on Natural Resources, *Taking from the Taxpayer: Public Subsidies for Natural Resource Development* (Washington, DC, 1994). [*Combination*] The majority staff report cited EIA's 1992 estimate for both historic cost subsidies and the market price subsidy without specifying a preferential method. The report addressed Federal hydropower projects in the 17 States served by the Bureau of Reclamation, which produce power marketed by two PMAs, the Western Area Power Administration (WAPA) and the Bonneville Power Administration (BPA). The report also mentioned that loans and loan guarantees administered by the Rural Electrification Administration (REA) constituted a subsidy.

Putnam, Hayes & Bartlett, Inc., *Analysis of TVA Subsidies and Artificial Competitive Advantages* (Washington, DC, August 1995). [*Combination*] Putnam estimated that TVA received $1.217 billion in subsidies in 1993. About half the subsidy was attributed to exemption from Federal and State income taxes, calculated as the revenue requirement necessary to bring TVA to a tax liability comparable to investor-owned utilities, 2.97 percent of net electric utility plant. Other areas of subsidies quantified were exemptions from other State and local taxes (net of payment in lieu of taxes), about 38 percent of total subsidies. Federal revenue losses from sales of preference power and State and local tax expenditures to TVA bondholders comprised relatively small portions of total subsidy.

U.S. General Accounting Office, *Federal Power: Outages Reduce the Reliability of Hydroelectric Power Plants in the Southeast*, GAO/T-RCED-96-180 (Washington, DC, July 1996). [*Other measure*] Focusing on the Corps of Engineers hydroelectric resources marketed by the Southeastern Power Administration, GAO found that 11 plants comprising 1.96 gigawatts of hydroelectric capacity experienced an availability decline of about 8 percent over the period 1987 to 1995. The report suggested that the Corps of Engineers planning and budgeting systems did not facilitate effective maintenance schedules. Ironically, the reduced output necessitated rate increases for Southeastern, which under a market price methodology would reduce the extent of the Federal subsidy.

U.S. General Accounting Office, *Power Marketing Administrations: Cost Recovery, Financing, and Comparison to Nonfederal Utilities*, GAO/AIMD-96-145 (Washington, DC, September 1996). [*Combination*] In this report, GAO estimated costs and revenues using three methodological questions: have three PMAs (Southeastern, Southwestern, and Western) been able to recover their power-related costs? Do they realize a subsidy through their financing? And is there a market-price differential between them and non-Federal utilities with respect to wholesale rates? GAO reported that these three PMAs have not recovered their power-related costs, falling short in 1995 by $83 million.[157] Cumulatively, GAO estimated a shortfall from these power-related projects of $1.8 billion (1995 dollars).[158] Additionally, GAO estimated a financing subsidy totaling $228 million in 1995, arising from the difference between average interest rate costs and the Treasury average interest rate.[159] GAO also found that PMA average wholesale rates were about 40 percent below those of adjacent investor-owned utilities in 1994, and that a roughly equivalent disparity in prices existed for the years 1990-1993 as well.

J.E. Kwoka, Jr., *Power Structure—Ownership, Integration, and Competition in the U.S. Electricity Industry* (Boston, MA: Kluwer Academic Publishers, 1996). [*Combination*] In an academic analysis of the principal dimensions of the performance of the U.S. electric power industry, Kwoka finds that publicly owned utilities have overall costs that are 5.5 percent lower than those of investor-owned utilities. The lower costs for publicly owned utilities arise in the

[157]Two projects have not operated as designed, the Russell project and the Truman project. Two other projects, Washoe and Mead-Phoenix, are in financial danger, and a transmission line was abandoned. According to GAO, the Pick-Sloan irrigation project will probably not be completed, preventing the recovery of those costs in the absence of Congressional action. Certain environmental mitigation costs incurred at Shasta dam and Glen Canyon dam have also been excluded from rate recovery.

[158]"Cumulatively," apparently, means "over the past 30 years."

[159]GAO suggested that the cumulative financing subsidy could be "in the billions."

distribution sector, while investor-owned utilities achieve greater efficiency in generation. Publicly owned utilities price their power lower than investor-owned utilities, ranging between 2.5 percent and 3.7 percent. The residential sector realizes most of the price benefits. Kwoka finds significant vertical economies of scale, providing a cost rationale for the traditional industry structure. Thus, the role of ownership type in overall performance is given a cost basis, indicating that coexistence of public and private ownership is both rational and beneficial.

R. Munson, *Federal Power Dinosaurs: Reforming TVA and PMAs in a Competitive Electricity Environment* (Washington, DC: Northeast-Midwest Institute, 1997). [*Combination*] Munson cites several other studies, claiming annual subsidies as high as $3.2 billion annually.[160] Munson placed estimates of revenue forgone by TVA's exemption from Federal income tax at $1.2 billion, and he argued that TVA enjoyed a large financial advantage in the bond market, attributing its AAA rating more to TVA's association with the Federal Government than to its management practices and balance sheet.

U.S. General Accounting Office, *Federal Power: Issues Related to the Divestiture of Federal Hydropower Resources*, GAO/RCED-97-48 (Washington, DC, March 1997). [*Combination*] Without arriving at a recommendation, GAO identified some of the factors affecting the divestiture debate. The report acknowledged the considerable financial advantages in obtaining capital and mentioned the ability of the PMAs to charge lower rates than privately owned wholesalers. The report also described the preference customers, the chief beneficiaries of the subsidy, in some detail. Sale of these assets would allow the highest bidder to decide the extent and distribution of their potential benefits in water management, flood control, irrigation, recreation, and environmental management; however, the question of compatibility between public and private interests in the management of these assets remains.

Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options* (Washington, DC, March 1997), pp. 219-220. [*Market measure*] In a general discussion of reducing the deficit, CBO calculated that the Federal Government could net $65 million if PMAs, excluding Bonneville, were to charge the average wholesale rate realized by privately owned utilities (3.8 cents per kilowatthour in 1995). Another $145 million could be realized by ending BPA's residential exchange program, yielding a total annual savings of $210 million.

A. Richardson, "Public Power: An Inexpensive Insurance Policy Against Consolidation," *Public Utilities Fortnightly*, Vol. 135, No. 16 (September 1, 1997), pp. 40-45. [*Combination*] Richardson points out the important role that public power can play in sponsoring a competitive electricity marketplace. Objecting to the idea that the PMA practice of pricing power at cost constitutes a subsidy, he suggests that the real issue is whether or not the Federal Government should pursue maximum return on its investment in infrastructure. Richardson also argues that the nominal value to IOUs of cumulative net deferred income taxes exceeded $57 billion by 1994.

U.S. General Accounting Office, *Federal Electricity Activities: The Federal Government's Net Cost and Potential for Future Losses*, GAO/AIMD-97-110 (Washington, DC, September 1997). [*Treasury interest rate subsidy*] GAO itemized the Federal Government's net recurring cost, the differential between total expenses incurred and total revenue received from electricity activities, in an attempt to quantify the Government's exposure to risk in increasingly competitive electricity markets. GAO used an "accrual method," similar to the interest rate subsidy discussed here, using the Treasury rate for comparison, finding that in 1996, the net financing cost to the Federal Government was $1.459 billion, more than half of which was attributed to the Rural Utilities Service (RUS). With the inclusion of a writeoff

[160]Munson attributed that estimate to EIA (1992), summing the $1.2 billion from the interest rate subsidy and another $2 billion from the market price subsidy, which was illustrated but not included in the total. In the 1992 report, EIA quantified the subsidy at $1.4 billion, based on Federal budget information and net outlays.

of loans incurred by the RUS and direct power costs incurred by PMAs not recovered through rates, GAO estimated the subsidy for 1996 at $2.5 billion. Over the period 1992-1996, GAO estimated the net financing cost as $6.9 billion (constant 1996 dollars) and the total net cost as $8.6 billion.

Congressional Budget Office, *Should the Federal Government Sell Electricity?* (Washington, DC, November 1997). [*Combination*] Not necessarily geared to the issue of subsidy, the report is a comprehensive examination of the value of Federal hydropower assets, including TVA. Three methods of valuation were employed: maximum value to the private sector; present value of additional tax receipts to the Federal Government; and the present value of the net income stream which the Federal Government would forgo absent ownership of the assets. The assumption is that private owners would raise rates to prevailing market levels, and that the Federal Government would retain the debt obligations of the PMAs. The total value of these assets ranged from $45 to $62 billion. Divesting the assets might result in budgetary savings of as much as $16 billion or a budgetary loss of $0.2 billion, depending on future power rates.

U.S. General Accounting Office, *Rural Utilities Service: Risk Assessment for the Electric Loan Portfolio*, GAO/T-AIMD-98-123 (Washington, DC, March 1998). [*Combination*] Testimony focusing on the viability of RUS loans. As of September 1996, RUS had outstanding loans of $32 billion, about $10 billion of which GAO classified as "financially stressed." To a certain extent, loan recipients might be shielded from competitive pressure because of wholesale power contracts, but these are now being challenged in court, increasing the risk to the Federal Government.

Putnam, Hayes & Bartlett, Inc., *Subsidies and Unfair Competitive Advantages Available to Publicly-Owned Utilities* (Washington, DC, March 1998). [*Combination*] In a report prepared for the Edison Electric Institute, the trade association representing investor-owned utilities, the authors describe and estimate four components of subsidy to public power: income tax advantage, other tax advantages, reduced cost of capital, and the effects of preferential treatment by Federal power producers. Summing these four, the authors estimate the total subsidy at $6.23 billion for 1995, of which $1.32 billion can be traced to differences in average interest rates, with another $1.86 billion attributed to the difference between the revenue needs of investor-owned utilities (IOUs) and those of municipals, were they to lose Federally supplied hydropower. In a more direct analogy to the market-price methodology employed here, the authors also estimate the revenue forgone by the Federal Government at $4.475 billion (1995), again by applying the difference in cost basis between IOUs (4.87 cents per kilowatthour for bulk power) and PMAs (3.05 cents per kilowatthour). Under PHB's revenue forgone methodology, the Federal income tax component of total subsidy increases from $2.26 billion to $3.32 billion, reflecting exempted interest income realized by holders of securities issued by Federal and municipal utilities.

U.S. General Accounting Office, *Federal Power: Options for Selected Power Marketing Administrations' Role in a Changing Electricity Industry*, GAO/RCED-98-43 (Washington, DC, March 1998). [*Combination*] This report lays out three options for rethinking the Federal Government's role in generation and wholesale electricity markets: continue under the present regime of Federal ownership and operation; institute certain management and operations improvements, including restructuring PMAs as Federally owned corporations or raising rates such that direct power costs would be fully recovered; and full divestiture of the PMAs' assets. Noting that all electricity suppliers would soon face increased competition, the report indicated that the hydropower assets and the recovery of their costs posed some risk for the Federal Government. In discussing the divestiture option, GAO found that some preference customers would face higher rates if PMAs were transferred to private ownership. GAO also echoed CBO's (November 1997) finding that, under certain market conditions, the sale of these assets could result in a net loss to the Federal treasury.

L.L. Peters, *The Costs and Benefits of Federal Power Programs*, A Critique of the Report, "Should the Federal Government Sell Electricity?" Prepared for the American Public Power Association (Washington, DC: Northwest Economic Research, Inc., May 1998). [*Market measure*] Peters objects to CBO's methodology, specifically, the exclusive focus on Federal budget impacts, and he argues that CBO minimizes potentially problematic issues such as market power and regulation of transmission assets and ancillary services. Significantly, Peters objects to average wholesale cost as a viable factor in determining the present value of Federal assets because the data year, 1995, reflects noncompetitive prices and wholesale contracts from the 1980s. With specific regard to the Pacific Northwest, Peters suggests using a forecasted price for some future year as a better proxy for market value, thereby reducing the valuation to the Federal budget from $19.9 billion to $11.4 billion.

American Public Power Association, *Public Power's Lower Electric Rates to Customers Are Not Explained by the Use of Tax-Exempt Financing and Preferential Access to Federal Hydro Power* (Washington, DC, July 1998). [*Interest rate, market measure*] The American Public Power Association reports that the difference in rates charged by investor-owned utilities and publicly owned systems is only partially attributable to the use of tax-exempt financing and access to Federal hydroelectricity. With average embedded interest rates 1.1 percent less than those paid by IOUs, publicly owned systems would need to recover an additional $564 million (1999 dollars), which would require an average rate increase of 2.8 percent. This additional revenue requirement would narrow the differential between publicly owned utilities' rates and IOUs' rates by just 16 percent. If Federal hydropower were reallocated according to peak demand imposed by three types of utilities (rather than statutory preference), then publicly owned systems would need to recover an additional 3.6 percent.

C. Fischer and M.A. Toman, *Environmentally and Economically Damaging Subsidies: Concepts and Illustrations* (Washington, DC: Resources for the Future, October 1998). [*Combination*] The authors describe the financing mechanisms of public power and the PMAs as inefficient and environmentally damaging and note that certain tax exemptions increase electricity demand. The authors also expect that emerging wholesale markets will gradually erode the effects of these financial subsidies.

U.S. General Accounting Office, *Federal Power: Regional Effects of Changes in PMAs' Rates*, GAO/RCED-99-15 (Washington, DC, November 1998). [*Market measure*] This report provides a State-by-State analysis of changes to the rates of PMA preference customers in the event that market rates were to prevail. The report is broader in scope than the companion January 1999 report (GAO/RCED-99-55). A market price comparison was employed, finding that Southeastern's preference customers would experience the smallest rate increases, and that Western and Southwestern's preference customers might experience moderate rate increases. To estimate the market rate, GAO first determined the average wholesale rate paid by preference customers for power from all sources, and then determined the average wholesale rate paid to all sources other than PMAs, with the difference being the market rate. The report also estimates possible effects at the residential retail level of the markets. Bonneville Power was excluded from the study.

MSB Energy Associates, *Federal Tax Breaks That Lower Investor-Owned Utility Costs and U.S. Treasury Revenues*, Paper Prepared for the American Public Power Association (Madison, WI, December 1998). [*Tax analysis*] MSB estimated that IOUs benefited in the amount of $8.4 billion in 1996. Most of the benefit came from deferred income taxes arising from accelerated depreciation. Smaller benefits were attributed to investment tax credits and IOU issues of tax-free bonds. Treasury losses in 1996 were estimated as $8.8 billion, arising from the loss of direct taxes through deferred income taxes and income tax credits as well as forgone income taxes on equity and interest income.

U.S. General Accounting Office, *Federal Power: PMA Rate Impacts, by Service Area*, GAO/RCED-99-55 (Washington, DC, January 1999). [*Market measure*] Reporting on estimated impacts for preference customers of the PMAs, the report examines rate impacts by PMA and describes potential impacts of PMA rate changes in specific, disaggregated State markets. GAO used the market price analysis developed in its November 1998 report and reached the same substantive conclusions found previously, namely, that Southeastern's preference customers would likely experience small rate increases, and that areas served by Southwestern and Western would likely face moderate rate increases. Certain markets served by Western Area Power in South Dakota, Iowa, and Minnesota could face sizable rate increases.

U.S. General Accounting Office, *Federal Power: Implications of Reduced Maintenance and Repairs of Federal Hydropower Plants*, GAO/RCED-99-63 (Washington, DC, March 1999). [*Combination*] Reduced reliability of Federal hydropower assets places a strain on their ability to compete with more reliable units. GAO found that over the period 1993-1997, units operated by the Bureau of Reclamation were available about 83 percent of the time, and units operated by the Corps of Engineers were available about 89 percent of the time. The industry average for non-Federal hydroelectric assets was 91 percent. The report described some alternative finance strategies that Bonneville Power had used to fund much-needed maintenance. The report pointed out the difference in rates charged by PMAs and other private wholesalers but suggested that, ultimately, the lower rates helped the PMAs recover their accumulated debt to the Treasury.

U.S. General Accounting Office, *Tennessee Valley Authority: Assessment of the 10-Year Business Plan*, GAO/AIMD-99-142 (Washington, DC, April 1999). [*Combination*] GAO reviewed TVA's 10-Year Plan for the period 1997-2007 and determined that TVA was on the "right track" in moving to reduce its high fixed financing costs in order to respond to competitive pressures by 2007. At the same time, GAO also characterized two of TVA's goals as "unachievable." Significantly, GAO approved of TVA's decision to refinance $2.7 billion of Federal Financing Bank (FFB) debt held at 9.67 percent to long-term bonds at 5.37 percent.[161] GAO projected that the refinancing measure alone would provide annual savings of $116 million over the 1997-2007 period. TVA's ultimate goal is to reduce its debt by half to about $14 billion, but GAO found that an additional 2 years would be needed to achieve that goal. TVA also has about $8.5 billion in deferred assets, primarily non-generating nuclear plants, which it hopes to reduce to $500 million by 2007; GAO doubted that the full reduction could be accomplished. Further, GAO found that TVA had underestimated certain costs over the period, namely, for capital expenditures on environmental equipment in excess of the $600 million per year allowed by the Plan, and for investment in new generating capacity. GAO found that TVA's assumptions about future market prices for electricity were reasonable, implying that the overall success of the Plan will be highly sensitive to market prices.

MSB Energy Associates, *Twisted Facts, Tortured Logic: EEI's Failed Attempt To Explain Away Public Power's Low Rates*, Paper Prepared for the American Public Power Association (Madison, WI, October 1999). [*Combination*] In a rebuttal to the Putnam, Hayes & Bartlett study of 1998, MSB argues that alternative calculations of the effects of income tax advantages, non-income tax advantages, cost of capital, and preference power yield a substantially different result. Of the 1.17 cents per kilowatthour difference in average retail rates, MSB reports that income tax exemptions account for only 22 percent of the price advantage enjoyed by publicly owned utilities, rather than the 50 percent figure implied by Putnam. For non-income tax exemptions, MSB calculates a percentage difference of 1 percent (Putnam implied 18 percent); for cost of capital, MSB accounts for 10 percent of the difference (Putnam implied 30 percent); and for preference power, MSB accounted for 3 percent of the difference (Putnam implied 42 percent).

[161]Congressional authority for the refinancing was included in the 1999 Treasury and General Government Appropriations Act.

Table A1. Comparison of Estimates for Federal Electricity Subsidies

Report, Author	Analysis Year	Estimate (Million Nominal Dollars)	Estimate (Million 1999 Dollars)	Scope	Approach	Main Findings (Nominal Dollars)
The Hidden Costs of Energy. Center for Renewable Resources	1984	28,000	42,080	Electric utilities	Budget outlay, tax benefits, loans	$4 billion attributed to REA, $1.2 billion in interest rate subsidy to PMAs and TVA.
Federal Energy Subsidies: Energy, Environmental, and Fiscal Impacts. Koplow	1989	13,666	17,380	Industry-wide, plus Federal	Tax benefits, budget outlays	$5.7 billion in agency outlays, of which $1.2 billion to REA, $7.9 billion in tax benefits, most of which to ACRS.
Federal Energy Subsidies. EIA	Fiscal year 1992	1,409	1,608	PMAs, TVA, REA	Budget outlay, net of receipts	Alternatively: $4.3 billion at IOU interest rate, $2.8 billion at government rate; $2 billion using market price.
Reducing the Deficit: Spending and Revenue Options. CBO	1995	210	223	BPA, PMAs	Cross subsidy, and price difference	$145 million for BPA's residential exchange program; another $65 million is revenue forgone from a PMA average wholesale rate lower than the national average, and the preferred customer requirement.
PMAs: Cost Recovery, Financing, and Comparison to Nonfederal Utilities. GAO	Fiscal year 1995	311	330	SEPA, SWPA, WAPA	Interest rate subsidy plus unrecovered costs	Includes $228 million in Treasury rate subsidy for three PMAs and $83 million for direct power costs not recovered through rates.
The Federal Government's Net Cost and Potential for Future Losses. GAO	Fiscal year 1996	2,462	2,565	SEPA, SWPA, WAPA, BPA, RUS	Interest rate subsidy plus unrecovered costs	Includes $1.878 billion for RUS, $185 million for three PMAs' financing costs and other power-related costs, and $398 million for BPA.
Should the Federal Government Sell Electricity? CBO	1995	Not estimated	Not estimated	Federal utilities	Net cash flow in present terms using average market rates	Federal assets are worth between $45 billion and $62 billion, depending on power rates; selling these assets would either net $16 billion or cost $0.2 billion.
Regional Effects of Changes in PMAs' Rates. GAO	1995	Not estimated	Not estimated	SEPA, SWPA, WAPA	Differential in preference customer average rates between PMA power and all power sources	Very little price differential in SEPA, moderate price differential in SWPA and WAPA.
Subsidies and Unfair Competitive Advantages Available to Publicly-Owned Utilities. Putnam, Hayes & Bartlett	1995	4,475	4,749	All customers, including IOUs	Market price difference	Market price estimated as the difference between IOUs' bulk rate (4.87 ¢/kWh) and PMAs (3.05). Report also estimates competitive advantage through tax avoidance and lower cost of capital.